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(DEFENSE ECONOMIC IMPACT MODELING SYSTEM)(U) OFFICE OF
THE UNDER SECRETARY OF DEFENSE RESEARCH AND ENGINEE..
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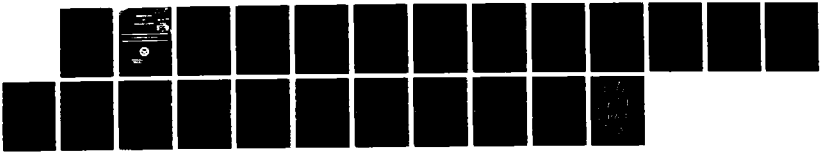

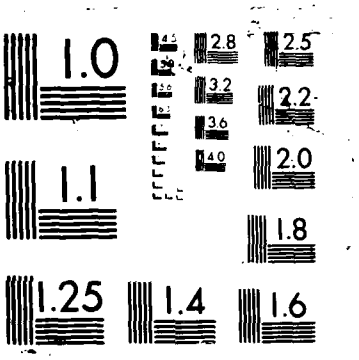
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Cynthia Gonzales 756-2310

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DEFENSE USE OF SKILLED LABOR

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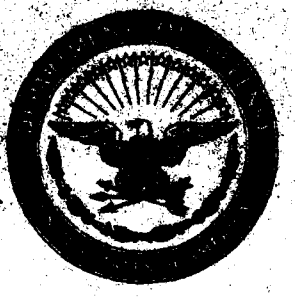
AN INTRODUCTION TO LDEIMS



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DEFENSE USE OF SKILLED LABOR

An Introduction to LDEIMS

DEPARTMENT OF DEFENSE

Principal Point of Contact:

Office of the Under Secretary of Defense for
Research and Engineering
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Technical Questions about LDEIMS or DEIMS:

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Office of the Director,
Program Analysis and Evaluation
Office of the Secretary of Defense
Pentagon, Room 2B284
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1. INTRODUCTION

The Department of Defense (DoD) has developed a model used to project defense related demands for labor in each of 163 occupational categories. The projections are made using a module of the Defense Economic Impact Modeling System (DEIMS) referred to as LDEIMS.

DEIMS itself is described in Defense Purchases: An Introduction to DEIMS, which is available from the DoD point of contact listed at the front of this booklet. This booklet discusses only LDEIMS. It walks through a sample LDEIMS projection, describes how the projections are made, and discusses sources of uncertainty in them.

Attached at the end of this booklet is a listing of the occupations included in LDEIMS and a form for ordering LDEIMS projections for particular occupations. Along with the order form is a card designed to get your views on the projections and this booklet. Your comments will help us improve both the usefulness of the projections and the form in which they are presented.

2. SAMPLE LDEIMS PROJECTIONS

Presented in Table 1, as an example, are the LDEIMS projections of employment of aero-astronautical engineers.

The top half of this table shows what is called "defense induced employment." Defense induced employment of people in an occupation is defined as the sum of:

- Employment in that occupation by DoD;
- Private sector employment in that occupation directly engaged in defense production; and
- Private sector employment in that occupation indirectly engaged in defense production; i.e., engaged in production of inputs to goods bought by DoD; production of inputs to those inputs; and so on through the chain of production.

The estimates shown are of individuals employed full or part time, and not of "full time equivalents."

Shown in the lower half of the table is projected total employment of aero-astronautical engineers. Nondefense employment (not shown separately) is the difference between total and defense induced employment in the category.

For each occupation, both total and defense related employment is broken down among 81 industrial sectors, which together account for total GNP. (Significant employment of aero-astronautical engineers is reported only in the 12 sectors that appear in Table 1.) These 81 sectors are defined as aggregates of 4-digit Standard Industrial Classification (SIC) industries. The appendix to the booklet contains a listing of the 4-digit SIC industries that make up each of the 81 sectors used in LDEIMS. 1/

The format of the projections is the same for all of the 161 occupations included in LDEIMS. Aero-astronautical engineers is a convenient example because employment is concentrated in comparatively few industries. It is, however, unrepresentative in two respects. First, employment in most occupational categories is much more widely distributed among industries. Second, defense induced employment is about 45 percent of total employment of aero-astronautical engineers. (This is not surprising, as DoD and defense related purchases account for over half of the output of the domestic aerospace industries). For most occupations, including other engineering specialities, the defense induced share of total employment is much smaller.

1/ The definitions of the 4-digit SIC industries are given in U.S. Office of Management and Budget, Standard Industrial Classification Manual (Stock Number 041-001-00066-6), U.S. Government Printing Office, Washington, D.C. 20402.

TABLE 1

8/10/84

DEFENSE ECONOMIC IMPACT MODELING SYSTEM
OCCUPATION BY INDUSTRY MODEL
ESTIMATES OF INDUSTRIAL EMPLOYMENT BY OCCUPATION
2. Aero-astronautic engineers
(THOUSANDS OF PERSONS)

INDUSTRY	1984	1985	1986	1987	1988	1989	AVG. ANN % GROWTH 1984 TO 1989
DEFENSE INDUCED EMPLOYMENT							
13. ORDNANCE & ACCESSORIES	3.02	3.37	3.72	4.01	4.23	4.39	7.76
42. OTHER FAB. METAL PRODUCTS	0.01	0.01	0.01	0.02	0.02	0.02	6.75
43. ENGINES & TURBINES	0.01	0.01	0.01	0.01	0.01	0.01	0.77
51. OFFICE,COMPUTING & ACCT. MACH.	0.01	0.01	0.01	0.01	0.01	0.01	6.58
53. ELECTRICAL MACHINERY	0.04	0.04	0.05	0.05	0.05	0.05	6.11
56. RADIO,TV, & COMMUNICATION EQ.	0.84	0.93	1.02	1.08	1.10	1.11	5.66
57. ELECTRONIC COMPONENTS & ACCESS.	0.03	0.04	0.04	0.05	0.05	0.05	7.11
60. AIRCRAFT & PARTS	14.36	16.43	18.19	18.67	17.93	17.43	3.94
62. INSTRUMENTS & SUPPLIES	0.11	0.12	0.13	0.13	0.13	0.13	2.74
65. TRANSPORTATION & WAREHOUSING	0.06	0.07	0.07	0.08	0.08	0.08	5.69
73. BUSINESS SERVICES	0.25	0.29	0.32	0.35	0.37	0.38	8.82
78. FEDERAL GOVERNMENT	4.01	4.03	4.05	4.06	4.06	4.06	0.25
81. SELF-EMPLOYED & UNPAID FAMILY WORKERS	0.23	0.25	0.27	0.28	0.28	0.28	4.02
TOTAL, ALL INDUSTRIES	23.00	25.63	27.93	28.80	28.33	28.00	4.02
TOTAL EMPLOYMENT							
13. ORDNANCE & ACCESSORIES	4.22	4.53	4.88	5.18	5.42	5.59	5.79
40. FAB. STRUCTURAL METAL PRODUCTS	0.07	0.07	0.07	0.07	0.07	0.07	1.08
42. OTHER FAB. METAL PRODUCTS	0.19	0.19	0.20	0.20	0.21	0.22	3.00
43. ENGINES & TURBINES	0.11	0.11	0.11	0.11	0.11	0.11	0.48
51. OFFICE,COMPUTING & ACCT. MACH.	0.07	0.07	0.07	0.08	0.08	0.08	3.06
53. ELECTRICAL MACHINERY	0.17	0.18	0.19	0.20	0.21	0.21	4.29
56. RADIO,TV, & COMMUNICATION EQ.	2.24	2.37	2.53	2.65	2.72	2.77	4.35
57. ELECTRONIC COMPONENTS & ACCESS.	0.14	0.15	0.16	0.17	0.18	0.18	4.86
60. AIRCRAFT & PARTS	24.78	26.96	29.37	30.72	30.96	31.21	4.72
62. INSTRUMENTS & SUPPLIES	0.51	0.53	0.55	0.56	0.57	0.57	2.23
65. TRANSPORTATION & WAREHOUSING	1.25	1.29	1.33	1.36	1.40	1.43	2.78
68. UTILITIES	0.14	0.14	0.14	0.14	0.14	0.14	-0.03
69. WHOLESALE & RETAIL TRADE	0.24	0.25	0.25	0.25	0.26	0.26	1.51
73. BUSINESS SERVICES	4.71	4.95	5.18	5.40	5.64	5.86	4.46
77. MISC. SERVICES	0.47	0.48	0.48	0.49	0.49	0.50	1.13
78. FEDERAL GOVERNMENT	10.47	10.88	11.28	11.67	12.00	12.21	3.13
79. STATE & LOCAL GOVT.	0.23	0.23	0.23	0.23	0.24	0.24	1.03
81. SELF-EMPLOYED & UNPAID FAMILY WORKERS	0.50	0.53	0.57	0.59	0.60	0.61	4.28
TOTAL, ALL INDUSTRIES	50.50	53.91	57.59	60.06	61.29	62.27	4.28

There are, finally, some basic points about the LDEIMS projections that should be noted:

- The projections, which are issued annually in May, are based on the President's budget, submitted to the Congress in January of each year.
- The projections reflect planned DoD expenditures. (Expenditures generally differ from appropriations; appropriations usually are voted in a single year, but expended over several years.)
- The projections reflect DoD expenditures only; they do not include defense-related expenditures of other federal agencies.
- The projections are for calendar years.

3. HOW THE PROJECTIONS ARE MADE

This section describes how the LDEIMS projections are made. Briefly, the computations fall into two main parts:

- o Projection of employment in each of 81 industrial sectors; and
- o Estimation (sector by sector) of employment in each of 163 occupational categories.

Both of these steps rely heavily on projections and data published by the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor.

Total Employment by SIC Sector

LDEIMS takes as its point of departure DEIMS projections of purchases from each of 400 SIC industries. These projections are used in the employment component of the Data Resources, Inc. (DRI) Interindustry Model to compute projected employment in each industry. 1/

For the base year (currently 1981) the coefficients in the DRI employment model are ratios of employment to industry output. The projected values of the labor input coefficients reflect expected trends in labor productivity. (Note that employment per dollar of output is the reciprocal of average labor productivity.)

LDEIMS assumes that the labor input coefficient is the same for defense and nondefense production. Projected defense induced employment in an industry, then, is computed as the projected defense purchases from that industry times the labor input coefficient for the industry. (The projections of defense purchases used in computing defense related employment include both purchases by DoD and indirect defense purchases.) Projected total employment is similarly computed using projected total purchases from the industry.

Adjustment of the Projections to an Establishment Basis

As is discussed below, employment in various occupations is computed (given projections of total employment in each industry) using the BLS National Industry-Occupational Matrix. An intervening step is required because the projections from the DRI Employment Model are on a commodity basis while the National Industry-Occupational Matrix is on an establishment basis.

1/ The employment module of the DRI interindustry model is currently being revised, and documentation of it is not yet available.

These two differ in their treatment of employment in plants (and other sorts of establishments) that produce goods classified in two or more industries. In such cases, commodity based estimates reflect an allocation, on the basis of the products produced, of employment in the plant in question among the relevant industries. In an establishment based survey, however, total employment in the plant is allocated to the industry that accounts for the largest share of the plant's output.

It is impracticable to put the National Industry-Occupational Matrix on a commodity basis. Therefore projections from the DRI Employment Model must be put on an establishment basis. This is done as follows:

1. For each industry, the ratio of the BLS employment figure (on an establishment basis) for 1982 to the corresponding DRI figure (on a commodity basis) is computed.

2. The DRI projection of employment for each year of the forecast horizon is multiplied by this ratio to give the adjusted employment figure for the industry used in computing employment in various occupations.

In effect, this amounts to using growth rates from the DRI employment Model and a BLS establishment based figure for 1982 to project employment for each industry.

Table 2 shows the results of this procedure for two cases. In 1982, employment in the ordnance and assessories industry (on an establishment basis) was only 75 percent of employment on a commodity basis. (This occurs because some establishments that produce ordnance and accessories were not, for purposes of measuring employment on an establishment basis, classified within this industry.) Consequently, projected employment from the DRI Interindustry Model is multiplied by 0.75 to obtain the adjusted projection of employment in the ordnance and accessories industry used in subsequent computations of employment in various occupations. In the other case shown--primary ferrous metals--1982 employment on an establishment basis is 103.3 percent of employment on a commodity basis. (This occurs because some employment in the industry (measured on an establishment basis) is used to produced products classified in some industry other than primary ferrous metals.) In this case, the adjusted projection is 1.033 times the projection of employment computed using the DRI Interindustry Model.

Employment by Occupation

The 163 occupational categories in LDEIMS are aggregations of more detailed categories established by BLS. Definitions of the occupational categories used by BLS change somewhat from one survey to the next. BLS maintains detailed definitions of the categories used. 1/

1/ Questions about the definitions used to describe the various occupational categories should be addressed to Mrs. Delores Turner, Manager, National Industrial-Occupational Matrix, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C. 20212 (telephone 202-272-5283).

TABLE 2

PROJECTED EMPLOYMENT ON A COMMODITY BASIS AND ON AN ESTABLISHMENT BASIS FOR ORDNANCE AND ACCESSORIES AND PRIMARY FERROUS METALS (Thousands of Employees)

	1982	1983	1984	1985
Ordnance and Accessories				
Commodity Basis [1/]	226,000	267,000	286,000	303,000
Establishment Basis [2/]	170,000	201,000	215,000	228,000
Primary Ferrous Metals				
Commodity Basis [1/]	608,000	610,000	696,000	722,000
Establishment Basis [2/]	628,000	630,000	718,000	756,000

1/ From employment module of Data Resources, Inc., Interindustry Model.

2/ Commodity based projection times the ratio for 1982 of the Bureau of Labor Statistics establishment based employment estimate to the commodity based estimate.

The BLS National Industry-Occupational Matrix gives, for each industry, the shares of employment in the industry accounted for by various occupations. 2/ This matrix, which covers wage and salary workers, is prepared biannually by BLS. For all nonagricultural industries it is based on data from the biannual Occupational Employment Statistics survey (OES), which covers about one-third of the economy each year. Distributions of occupational categories for agricultural, household, and self-employed workers are derived from the Current Population Survey (CPS). This survey queries individuals, not employers.

Projections of occupational distribution by industry are generated by BLS by analyzing the factors expected to influence trends in the staffing patterns of industry as technology change. Currently, the BLS projected matrix is for 1995.

LDEIMS uses (for each year of the forecast horizon) the appropriate linear interpolation between the National Industry-Occupational matrix for 1982 and the projected table for 1995. For each industry, the estimated shares of employment accounted for by the different occupational categories are multiplied by total projected employment in the industry. Projected employment for an occupation is the sum across industries of employment in the occupation in question.

DoD employment is, however, handled somewhat differently. The total number of civilian employees in the Department of Defense is derived from the five year plan of the Department. Distributions of employees into occupational categories are based on special tabulations developed by BLS from Office of Personnel Management reports. It should also be noted that in LDEIMS teachers and other educational workers employed by state and local governments are included in Sector 77 (Miscellaneous Services) rather than in Sector 81 (Government).

2/ See "National Industry-Occupational Matrix," Chapter 20 of U.S. Department of Labor, Bureau of Labor Statistics, Handbook of Methods, Bulletin 2134-1, GPO, Washington, D.C.

4. SOURCES OF UNCERTAINTY

Historical data that can be compared to LDEIMS projections are published. Such a comparison has not yet been made, however, because LDEIMS projections have been made only since 1982 and major revisions in the model were made in 1984. Moreover, as was noted above, BLS refines its occupational categories in successive surveys. Consequently, at this point, the extent of uncertainty in the LDEIMS projections can only be assessed by looking at the underlying data and assumptions.

The main source of uncertainty in the LDEIMS projections of employment lies in the projections of purchases upon which they rest. It is important in this regard to distinguish the projections of defense induced and total employment. The LDEIMS projections of defense induced employment are based on planned defense spending, not on DoD budgets enacted by the Congress. Actual employment will, of course, differ from projected levels to the extent that the actual levels and composition of defense spending differ from those in proposed DoD budget. The projections of defense induced employment, however, do not depend on projections of GNP, which are the main source of uncertainty in projections of nondefense employment.

In addition to the projections of defense and nondefense purchases, the LDEIMS projections rest on:

- Projections of changes in labor productivity included in the employment component of the DRI Interindustry Model; and

- Occupational shares computed from BLS projections of employment in various occupations.

Labor productivity in various industries does not necessarily follow a smooth trend; there is a distinct cyclical component to changes in labor productivity. Moreover, labor productivity is influenced by relative wages and the factors (such as interest rates) that govern substitution among labor and other factors of production. Nevertheless, over a five year horizon, errors in forecasting labor productivity are unlikely to introduce more than a few percentage points of error into the LDEIMS employment projections.

The BLS projections used to derive occupational shares reflect the National Industry-Occupational Matrix. There is significant sampling variation in the data used to construct this matrix. It is also important to bear in mind that this matrix reflects the occupations in which individuals are employed, not those in which they are trained. Consequently, economic forces can have a pronounced effect on reported employment in an occupation. This is especially true of the scientific and engineering occupations.

APPENDIX: COMPOSITION OF THE 81 INDUSTRIAL SECTORS USED IN LDEIMS

81 Order Sector Number	Industrial Sector	Comparable DEIMS 400 Order Industries
1	Agricultural Products	1 - 11
3	Forestry and Fishery Products	12
4	Agricultural, Forestry, and Fishery Services	13
5	Iron Ore Mining	14
6	Nonferrous Metal Mining	15 - 16
7	Coal Mining	17
8	Crude Petroleum and Natural Gas	18
9	Stone and Clay Mining and Quarrying	19
10	Chemical Fertilizer Mineral Mining	20
11	New Construction	21 - 42
12	Maintenance and Repair Construction	43 - 44
13	Ordnance and Accessories	45 - 50
14	Food and Kindred Products	51 - 94
15	Tobacco Manufacturers	95 - 98
16	Fabric Yarn and Thread Mills	99 - 102
17	Miscellaneous Textile Goods	103 - 106
18	Apparel	107 - 109
19	Miscellaneous Fabricated Textile Products	110 - 111
20	Lumber and Wood Products	112 - 124
21	Wood Containers	125
22	Household Furniture	126 - 131
23	Other Furniture and Fixtures	132 - 138
24	Paper and Allied Products	139 - 147
25	Paperboard Containers and Boxes	148
26	Printing and Publishing	149 - 160
27	Chemicals and Chemical Products	161 - 170
28	Plastics and Synthetic Materials	171 - 174
29	Drugs, Cleaning, and Toiletry Preparations	175 - 179
30	Paints and Allied Products	180
31	Petroleum Refining and Related Products	181 - 183
32	Rubber and Miscellaneous Plastic Products	184 - 189
33	Leather Tanning and Finishing	190
34	Footwear and Other Leather Products	191 - 195
35	Glass and Glass Products	196 - 197
36	Stone and Clay Products	198 - 212
37	Primary Ferrous Metals	213 - 221
38	Nonferrous Metals	222 - 235
39	Metal Containers	236 - 237
40	Fabricated Structural Metal Products	238 - 246
41	Screw Machine Products and Stampings	247 - 248
42	Other Fabricated Metal Products	249 - 259
43	Engines and Turbines	260 - 261
44	Farm and Garden Machinery	262 - 263
45	Construction and Mining Machinery	264 - 266
46	Materials-Handling Machinery and Equipment	267 - 270
47	Metalworking Machinery and Equipment	271 - 276

APPENDIX: COMPOSITION OF THE 81 INDUSTRIAL SECTORS USED IN LDEIMS

81 Order Sector Number	Industrial Sector	Comparable DEIMS 400 Order Industries
48	Special Industry Machinery	277 - 282
49	General Industry Machinery	283 - 289
50	Miscellaneous Nonelectrical Machinery	290
51	Office, Computing, and Accounting Machinery	291 - 295
52	Service Industry Machines	296 - 300
53	Electrical Machinery	301 - 308
54	Household Appliances	309 - 315
55	Electrical Lighting and Wiring	316 - 318
56	Radio, TV, and Communication Equipment	319 - 322
57	Electronic Components and Accessories	323 - 325
58	Miscellaneous Electrical Machinery and Equipment	326 - 330
59	Motor Vehicles and Equipment	331 - 334
60	Aircraft and Parts	335 - 337
61	Other Transportation Equipment	338 - 344
62	Instruments and Supplies	345 - 350
63	Optical, Ophthalmic, and Photographic Equipment	351 - 353
64	Miscellaneous Manufacturing	354 - 362
65	Transportation and Warehousing	363 - 369
66	Communication Except Radio and TV	370
67	Radio and TV Broadcasting	371
68	Utilities	372 - 374
69	Wholesale and Retail Trade	375 - 376
70	Finance and Insurance	377 - 379
71	Real Estate and Rentals	380 - 381
72	Personal Services, Except Automotive	382 - 384
73	Business Services	385 - 387
74	Eating and Drinking Places	388
75	Automotive Repair and Service	389
77	Miscellaneous Services	392 - 397

CODES FOR ORDERING LDEIMS PROJECTIONS

The following pages provide a list of 163 separate occupational categories for which LDEIMS projections are available. Each table shows forecast levels of employment in industrial sectors using these skills over the five years of the current defense program. To order forecasts, simply complete the form attached at the end of this booklet. Be sure to include the order numbers for the tables you are requesting and whether or not you wish to be included on the LDEIMS mailing list so that future updates may be sent as they become available.

OCCUPATIONAL LABOR CATEGORIES
FOR WHICH LDEIMS FORECASTS ARE AVAILABLE:

(Please order by numbers listed at left)

LDEIMS ORDER #	OCCUPATIONAL LABOR CATEGORY
L1.	ENGINEERS
L2.	Aero-astronautic engineers
L3.	Chemical engineers
L4.	Civil engineers
L5.	Electrical engineers
L6.	Industrial engineers
L7.	Mechanical engineers
L8.	Metallurgical engineers
L9.	Mining engineers
L10.	Petroleum engineers
L11.	All other engineers
L12.	SCIENTISTS
L13.	Chemists
L14.	Physicists
L15.	Biological & medical scientists
L16.	Life & physical scientists
L17.	Mathematicians & statisticians
L18.	Mathematical specialists, n.e.c.
L19.	ENGINEERING AND SCIENCE TECHNICIANS
L20.	Civil engineering technicians
L21.	Drafters
L22.	Electrical & electronic technicians
L23.	Industrial engineering technicians
L24.	Mechanical engineering technicians
L25.	Engineering & science technicians, n.e.c.
L26.	HEALTH WORKERS
L27.	Dentists
L28.	Professional nurses
L29.	Physicians, medical & osteopathic
L30.	All other health professionals
L31.	Other health workers
L32.	TECHNICIANS, N.E.C.
L33.	Airplane pilots & flight engineers
L34.	Air traffic controllers
L35.	Radio operators
L36.	Technical assistants, library
L37.	Tool programmers-numerical control
L38.	All other technicians, n.e.c.
L39.	COMPUTER SPECIALISTS
L40.	Computer programmers
L41.	Computer systems analysts

L42. SOCIAL SCIENTISTS AND OTHER PROFESSIONALS
L43. Economists
L44. Social scientists, n.e.c.
L45. Teachers
L46. College & university teachers
L47. Elementary & secondary school teachers
L48. Vocational education teachers
L49. All other teachers
L50. Writers, artists & entertainers
L51. Professional & technical workers, n.e.c.
L52. BUSINESS PROFESSIONALS AND STAFFS
L53. Managers, officials & proprietors
L54. Sales workers
L55. Clerical workers
L56. Computer & peripheral equipment operators
L57. Computer operators
L58. Peripheral EDP equipment operators
L59. Secretaries & office machine operators
L60. Clerical workers, n.e.c.
L61. CRAFT AND RELATED WORKERS
L62. Construction crafts workers
L63. Electricians
L64. Fitters, pipelaying
L65. Plumbers & pipefitters
L66. Refractory materials repairers
L67. Shipwrights
L68. Structural steel workers
L69. Construction crafts workers, n.e.c.
L70. Mechanics, repairers & installers
L71. Aircraft mechanics
L72. Auto mechanics & repairers
L73. Data processing machine mechanics
L74. Diesel mechanics
L75. Electrical instrument & tool repairers
L76. Electric motor repairers
L77. Engineering equipment repairers
L78. Instrument repairers
L79. Maintenance mechanics & repairers (utility)
L80. Marine mechanics & repairers
L81. Millwrights
L82. Telephone installers & repairers
L83. Mechanics, repairers, & installers, n.e.c.
L84. Metalworking crafts workers
L85. Blacksmiths
L86. Boilermakers
L87. Coremakers, hand, bench, and floor
L88. Forging press operators
L89. Header operators
L90. Heat treaters, annealers, temperers
L91. Layout markers, metal
L92. Machine tool setters, metalworking

L93. Machinists
L94. Molders, metal
L95. Molders, bench & floor
L96. Molders, machine
L97. Molders, metal n.e.c.
L98. Patternmakers, metal
L99. Punch press setters, metal
L100. Rolling mill operators & helpers
L101. Shear & slitter setters
L102. Sheet-metal workers & tinsmiths
L103. Tool & die makers
L104. Metalworking craft worker, n.e.c.
L105. Printing trades craft workers
L106. Other craft & related workers
L107. Auxiliary equipment operators
L108. Blue collar workers and supervisors
L109. Heavy equipment operators
L110. Inspectors
L111. Lens grinders
L112. Machine setters, plastic material
L113. Patternmakers, wood
L114. Patternmakers, n.e.c.
L115. Shipfitters
L116. Ship engineers
L117. Testers
L118. Craft & related workers, n.e.c.
L119. OPERATIVES
L120. Assemblers
L121. Aircraft structure and surface assembly
L122. Electrical & electronic assemblers
L123. Electro-mechanical equipment assembly
L124. Instrument makers & assemblers
L125. Machine assemblers
L126. Assemblers, n.e.c.
L127. Metalworking operatives
L128. Drill press & boring machine operatives
L129. Electroplators
L130. Grinding & abrading machine operatives
L131. Heaters, metal
L132. Lathe machine operators, metal
L133. Machine tool operators, combination
L134. Machine tool operators, numerical control
L135. Machine tool operators, tool room
L136. Milling & planning machine operators
L137. Pourers, metal
L138. Power brake & bending machine operators
L139. Punch press operators, metal
L140. Welders & flamecutters
L141. Metalworking operatives, n.e.c.

L142. All other operatives
L143. Batch plant operatives
L144. Blasters
L145. Boring machine operators, wood
L146. Coil finishers
L147. Cutters, machine
L148. Cutters, portable machine
L149. Cutter, finishing operator, rubber goods
L150. Die cutters & clicking machine operators
L151. Drillers, hand and machine
L152. Filers, grinders, buffers and chippers
L153. Furnace operators & tenders, ex. metal
L154. Winding operators
L155. Wirers, electronic
L156. Operatives, n.e.c.
L157. SERVICE WORKERS
L158. Food service workers
L159. Selected health service workers
L160. Protective service workers
L161. SERVICE WORKERS, N.E.C.
L162. LABORERS, EXCEPT FARMWORKERS
L163. FARMERS AND FARMWORKERS

ORDER FORM

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

_____

CITY _____ STATE _____ ZIP CODE _____

OCCUPATIONAL CATEGORY REPORTS DESIRED:

_____

PLEASE INCLUDE MY NAME ON YOUR MAILING LIST _____

SEND REPLIES TO:

OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR
RESEARCH AND ENGINEERING

OFFICE OF INDUSTRIAL BASE ASSESSMENT
5203 LEESBURG PIKE, SUITE 1406,
FALLS CHURCH, VA 22041

OR YOU MAY TELEPHONE

(202) 756-2310 (AV 289-2310)

FEEDBACK FORM FOR LDEIMS

1. Did this booklet provide the material you needed to interpret the projections in which you were interested? If not, what were the most important items missing?

2. Did the projections for the occupational category seem reasonable? Too high? Too low?

3. Are there other published forecasts to which LDEIMS projections can be readily compared?

4. What part of LDEIMS was of the most use (M) or the least (L) use to *you*?

_____ Detailed projections of occupational specialities important for defense production?

_____ Detailed projections of occupational specialities important to the economy as a whole?

_____ Employment growth patterns for specific occupations and industry categories?

5. Can you provide any insights which might be helpful in determining differences in consumption patterns between defense use of skilled labor as compared to industry-wide use of these same skilled labor categories?

6. Any other comments on LDEIMS--methodology, content, usefulness, etc?

OPTIONAL

NAME

TITLE

COMPANY NAME

ADDRESS

CITY STATE ZIP CODE

RETURN TO:

ECONOMIC ANALYSIS DIVISION
OFFICE OF THE DIRECTOR,
PROGRAM ANALYSIS & EVALUATION
OFFICE OF THE SECRETARY OF DEFENSE
THE PENTAGON, RM 2B-284,
WASHINGTON, D.C. 20301

END

DATE

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